

CLAIMS

What is claimed is:

1. An apparatus for detecting a VCR signal comprising:

5 a horizontal tracking portion for receiving a synchronous signal of an image signal and a system clock signal, for determining and outputting a phase error between the synchronous signal and a standard horizontal synchronous signal generated by the system clock signal, and for generating a horizontal synchronous signal and a vertical synchronous signal in response to the system clock signal; and

10 a VCR signal detecting portion for receiving the vertical synchronous signal, the horizontal synchronous signal, and the phase error, and for detecting a video cassette recorder (VCR) signal,

wherein the horizontal tracking portion comprises:

15 a phase comparator for receiving the synchronous signal and the system clock signal, and for generating the phase error as a phase difference between the synchronous signal and the standard horizontal synchronous signal at every horizontal line;

20 a pixel counter for receiving and counting the system clock signal; and
a timing generator for receiving an output of the pixel counter, and for generating the horizontal synchronous signal and the vertical synchronous signal; and

wherein the VCR signal detecting portion comprises:

25 a head switch pulse period generator which is reset by the vertical synchronous signal, receives the horizontal synchronous signal, and determines a specific pulse period as a head switch pulse period; and

a VCR signal detector for receiving the phase error during the head switch pulse period, and for detecting the synchronous signal as the VCR signal if the phase error exceeds a specific standard phase error value.

5 2. The apparatus of claim 1, wherein the horizontal tracking portion further includes:

 a tracking filter for receiving the phase error and generating an error value obtained by converting the phase error; and

10 an adder for generating a frequency value according to the phase error by adding the error value to an offset value for generating a basic frequency.

 3. The apparatus of claim 1, wherein the standard phase error value is determined according to the type of video cassette recorder (VCR).

15 4. An apparatus for detecting a VCR signal comprising:

 a phase comparator for receiving a synchronous signal of an image signal and a system clock signal, and generating a phase error as the phase difference between the synchronous signal and a standard horizontal synchronous signal generated by the system clock signal at every horizontal line;

20 a pixel counter for receiving and counting the system clock signal;

 a timing generator for receiving an output of the pixel counter, and generating a horizontal synchronous signal and a vertical synchronous signal;

25 a head switch pulse period generator which is reset by the vertical synchronous signal, receives the horizontal synchronous signal, and determines a specific pulse period as a head switch pulse period; and

 a VCR signal detector for receiving the phase error during the head switch pulse period, and detecting the synchronous signal as the VCR signal if the phase error exceeds a specific standard phase error value.

5. The apparatus of claim 4, wherein the standard phase error value is determined according to the type of video cassette recorder (VCR).

5 6. A method for receiving a synchronous signal of an image signal and a system clock signal and detecting a VCR signal of the synchronous signal, the method comprising the steps of:

10 (a) receiving the synchronous signal and the system clock signal, and generating a phase error as a phase difference between the synchronous signal and a standard horizontal synchronous signal generated by the system clock signal at every horizontal line;

15 (b) receiving and counting the system clock signal, and generating a counter value;

(c) receiving the counter value, and generating a horizontal synchronous signal and a vertical synchronous signal;

(d) determining a specific pulse period reset by the vertical synchronous signal and receiving the horizontal synchronous signal as a head switch pulse period; and

(e) receiving the phase error during the head switch pulse period, and detecting the synchronous signal as the VCR signal if the phase error is more than a specific standard phase error value.

20 7. The method of claim 6, wherein the standard phase error value is determined according to the type of video cassette recorder (VCR).